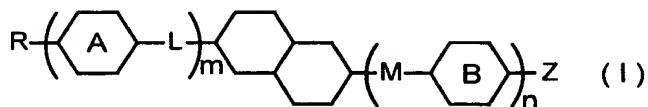


Replaced
by Art. 19
Amendment

CLAIMS

1. A composition represented by general formula (I):



- (wherein, R and Z may be substituted with a halogen and represent alkyl groups or alkoxy groups having 1-16 carbon atoms, alkenyl groups having 2-16 carbon atoms, alkenyloxy groups having 3-16 carbon atoms, alkyl groups having 1-12 carbon atoms substituted with an alkoxy group having 1-10 carbon atoms, hydrogen atoms, fluorine atoms, chlorine atoms, trifluoromethoxy groups, difluoromethoxy groups, trifluoromethyl groups, 3,3,3-trifluoroethoxy groups, cyano groups, cyanato groups, hydroxy groups or carboxy groups, m and n may be the same or different and respectively and independently represent an integer of 0-2, $m+n \leq 3$, L and M may be the same or different and respectively and independently represent $-\text{CH}_2\text{CH}_2-$, $-\text{CH}(\text{CH}_3)\text{CH}_2-$, $-\text{CH}_2\text{CH}(\text{CH}_3)-$, $-\text{CH}_2\text{O}-$, $-\text{OCH}_2-$, $-\text{CF}_2\text{O}-$, $-\text{OCF}_2-$, $-\text{COO}-$, $-\text{OCO}-$, $-\text{CH}=\text{CH}-$, $-\text{CF}=\text{CF}-$, $-\text{C}\equiv\text{C}-$, $-\text{O}(\text{CH}_2)_3-$, $-(\text{CH}_2)_3\text{O}-$, $-(\text{CH}_2)_4-$ or a single bond, rings A and B when present may be the same or different and respectively and independently represent a trans-1,4-cyclohexylene group in which one CH_2 group or more than one non-adjacent CH_2 groups in the group may be replaced by $-\text{O}-$ or $-\text{S}-$, a 1,4-phenylene group in which one CH_2 group or more than one non-adjacent CH_2 groups in the group may be replaced by $-\text{N}=$, a 1,4-cyclohexenylene group, 1,4-bicyclo(2,2,2)octylene group, piperidine-1,4-diyl

group, naphthalene-2,6-diyl group, trans-decahydronaphthalene-trans-2,6-diyl group or 1,2,3,4-tetrahydronaphthalene-2,6-diyl group, and although these may be substituted with a cyano group or halogen, in the case m or n represents 2, at least

5 one of the two L or M present represents a single bond; provided that the following cases are excluded:

i. case in which m and n represent 0, R represents a non-substituted alkyl group, and Z represents a non-substituted alkyl group or cyano group;

10 ii. case in which either m or n represents 1, the other of m or n represents 0, ring A or ring B when present represents a 1,4-cyclohexylene group, L or M when present represents a single bond, R or Z bonded to a decahydronaphthalene ring represents a non-substituted alkyl group, and R or Z bonded to
15 a 1,4-cyclohexylene group represents a non-substituted alkyl group, alkoxy group or alkenyloxy group;

iii. case in which either m or n represents 1, the other m or n represents 0, ring A or ring B when present represents a 1,4-cyclohexylene group, L when present represents -OCO- or M
20 when present represents -COO-, R or Z bonded to a decahydronaphthalene ring represents a non-substituted alkyl group, and R or Z bonded to a 1,4-cyclohexylene group represents a non-substituted alkyl group or cyano group;

iv. case in which either m or n represents 1, the other m or
25 n represents 0, ring A or ring B when present represents a non-substituted 1,4-phenylene group, L when present represents -OCO- or M when present represents -COO-, L or M when present

represents a single bond, R or Z bonded to a decahydronaphthalene ring represents an alkyl group, and R or Z bonded to a 1,4-phenylene group represents a non-substituted alkyl group, alkoxy group or cyano group;

5 v. case in which either m or n represents 1, the other m or n represents 0, ring A or ring B when present represent a non-substituted 1,4-phenylene group, L or M when present represents a single bond, R or Z bonded to a decahydronaphthalene ring represents a non-substituted alkoxy
10 group, and R or Z bonded to a 1,4-phenylene group represents a non-substituted alkyl group;

vi. case in which either m or n represents 1, the other m or n represents 0, ring A or ring B when present represents a trans-decahydronaphthalene-trans-2,6-diyl group, L when
15 present represents -OCO-, M when present represents -COO- or L or M when present represent a single bond, and R and Z represent non-substituted alkoxy groups;

vii. case in which either m or n represents 1, the other m or n represents 0, ring A or ring B when present represents a
20 non-substituted naphthalene-2,6-diyl group, L when present represents -OCO- or M when present represents -COO-, R or Z bonded to a decahydronaphthalene ring represents a non-substituted alkyl group, and R or Z bonded to a naphthalene-2,6-diyl group represents a non-substituted alkyl group,
25 bromine atom or cyano group, or the case in which R or Z bonded to a decahydronaphthalene ring represents a non-substituted alkoxy group, and R or Z bonded to a naphthalene-

2,6-diyl group represents a non-substituted alkyl group or cyano group;

viii. case in which n represents 2, m represents 0, R represents a non-substituted alkyl group, M when present adjacent to a decahydronaphthalene ring represents -COO-, at least one of rings B present represents a non-substituted 1,4-phenylene group, and Z represents a non-substituted alkyl group or bromine atom, or the case in which at least one of rings B present represents a pyrimidine-2,5-diyl group, and Z represents a non-substituted alkyl group, alkoxy group or cyano group;

ix. case in which m and n represent 1, ring A represents a trans-decahydronaphthalene-trans-2,6-diyl group or a 1,4-cyclohexylene group, ring B represents a non-substituted 1,4-phenylene group or 1,4-cyclohexylene group, L represents a single bond, M represents -COO-, -OCO-, -CH₂O- or -OCH₂-, and R and Z represent non-substituted alkyl groups; and,

applying similarly to compounds equivalent to the above using combinations of the abbreviations).

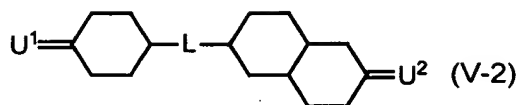
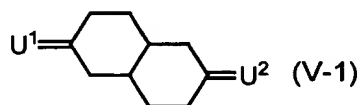
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2. A compound according to claim 1 wherein, ring A and ring B when present respectively and independently represent a 1,4-phenylene group, naphthalene-2,6-diyl group, 1,2,3,4-tetrahydronaphthalene-2,6-diyl group, trans-1,4-cyclohexylene group or decahydronaphthalene-2,6-diyl group that may be substituted with fluorine atom(s).

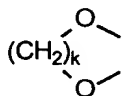
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hydroxyl group as necessary.

16. A compound represented by general formula (V-1) or general formula (V-2):



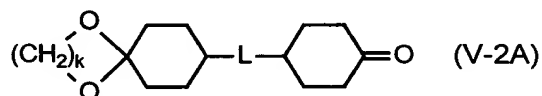
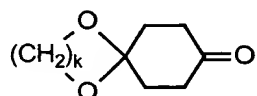
5 (wherein, U^1 and U^2 respectively and independently represent an oxygen atom or the following structure:



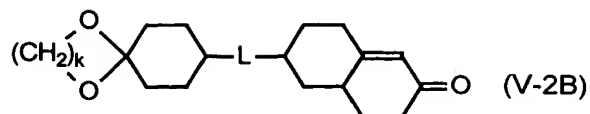
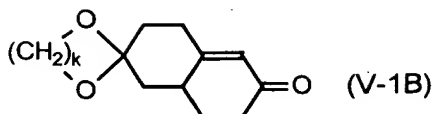
(wherein, k represents an integer from 1 to 7), L is the same as previously defined in general formula (I), and the decahydronaphthalene ring has a trans form).

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17. A production method of general formula (V-1) or general formula (V-2) according to claim 16 including: converting a compound represented by general formula (V-1A) or general formula (V-2A):



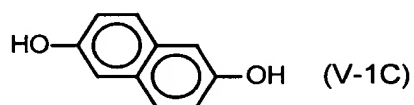
15 (wherein, k is the same as previously defined in general formula (V-1) or general formula (V-2), and L is the same as previously defined in general formula (I)) into an enamine using a secondary amine, and reacting it with methyl vinyl ketone to obtain a compound represented by general formula
20 (V-1B) or general formula (V-2B)



(wherein, k is the same as previously defined in general formula (V-1) or general formula (V-2), and L is the same as previously defined in general formula (I)) followed by reductive hydrogenation.

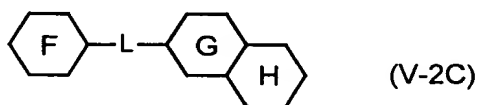
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18. A production method of general formula (V-1) according to claim 16 including: reducing a compound represented by formula (V-1C):



10 oxidizing the hydroxyl groups as necessary, and protecting the carbonyl groups as necessary.

19. A production method of general formula (V-2) according to claim 16 including: reducing a compound represented by general formula (V-2C):



15 (wherein, although ring G represents a cyclohexane ring or benzene ring, a single bond(s) of the cyclohexane ring may be replaced by double bond(s), and although rings F and H respectively and independently represent the following structures:

